IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	: Carl de Marcken et al.	Art Unit	: 3628
Serial No.	: 10/714,525	Examiner	: Thomas Dixon
Filed	: November 14, 2003	Conf. No.	: 2223

Title : GENERATING FLIGHT SCHEDULES USING FARE ROUTINGS AND RULES

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REPLY BRIEF

Pursuant to 37 C.F.R. § 41.41, Applicant responds to the Examiner's Answer mailed on September 15, 2010 as follows:

1. Rejections under 35 U.S.C. 101

Appellants stand by the arguments made in the Appeal Brief and provide the following additional arguments to address the comments made in the Examiner's Answer. With respect to claim 57, the Examiner states:

> **As such, the claim merely requires a computer for determining constraints derived from available fares. Even if the intended use of the step (i.e., to combine flights) may be a critical feature, the computer is only required for determining the constraints, which is deemed to be an insignificant pre-solution data gathering step. ... Examiner's position is not that all steps must be tied to a machine as alleged in the Appeal Brief (page 15), only the significant and critical steps of the invention. ... Accordingly, as the claims do not pass the machine-or-transformation test and appear directed to an abstract idea, the rejection of claims 57-62 and 68-76 as directed to non-statutory subject matter should be sustained.**

The examiner continues to argue that the step of "determining, by a computer, geographic and airline constraints derived from available fares to control the manner in which flights are combined prior to evaluation of fare rules," is an insignificant pre-solution data gathering step. Appellants disagree and reiterate that this feature is neither trivial nor insignificant pre-solution gathering activity. Rather, this feature involves sophisticated computer processing and is a

significant feature of claim 57 at least because generating of itineraries involves using the determined constraints with concomitant advantages for producing pricing solutions as described by Appellant.

The examiner also seems to allege that claim 57 is directed to non-statutory subject matter because it allegedly does not pass the machine-or-transformation test. Appellants note that the Supreme Court *in Bilski v. Kappos* has clearly stated that the *"machine-or-transformation test is not the sole test for patent eligibility under §101. The Court's precedents establish that although that test may be a useful and important clue or investigative tool, it is not the sole test for deciding whether an invention is a patent-eligible "process" under §101."*[1]

The preamble of claim 57 recites "a computer-implemented method," and several of the steps of claim 1 are recited as being performed by a "computer." Appellants contend that claim 57, along with the claims depending from claim 57 are clearly tied to a computer and therefore directed to statutory subject matter, within the meaning of 35 U.S.C. 101, at least for the foregoing reasons.

Appellants also contend that the subject matter of claim 68-76 falls under statutory subject matter within the meaning of 35 U.S.C. 101, at least for analogous reasons discussed above with respect to claim 57.

2. Rejections under 35 U.S.C. 112 second paragraph

Appellants stand by the arguments made in the Appeal Brief and provide the following additional arguments to address the comments made in the Examiner's Answer. With respect to claim 21, the examiner states:

> **Appellant argues that claim 21 is not indefinite because the disputed limitations use the phrase sequences of flights "in two separate features of claim 21." Brief, 16. Appellant attempts to differentiate determining constraints "on" flights and determining constraints "from" flights but does not explain how they differ. Appellant additionally states that in the second recitation the sequences are generated based on the determined constraints. However, the two recited sequences are not distinguished from one another and appear to be referencing the same set of sequences. The language used to draft the claim appears use sequences of**

[1] *Bilski et al. v Kappos*, 561 U. S. ____ (2010).

flights to determine constraints, and then use these same constraints to select the same sequences of flights. As this language is confusing, it does not adequately apprise the public as to what would constitute infringement of the claimed invention and the rejection for indefiniteness should be sustained.

Appellants disagree. In Claim 21, the second occurrence of the phrase "sequence of flights" does not provide antecedent basis for the first occurrence of the phrase "sequence of flights." Indeed, nothing in claim 21 supports the examiner's construction of claim 21 requiring that the two sequences of flights reference the same set of sequences. The first occurrence of the phrase "sequences of flights" is related to sequences of flights between the endpoints of the trip segments on which certain constraints are determined, whereas, the second occurrence of the phrase "sequences of flights," refers to those flights that are part of the generated itineraries.

Appellants contend that one skilled in this art reading claim 21 would be able to grasp these differences and thus the metes and bounds of claim 21. When the features of claim 21 are read as a whole, the instructions to: "determine constraints on sequences of flights between the endpoints of the trip segments," and instructions to "generate itineraries of sequences of flights using the constraints " would be understood as directed to determining constraints and directed to generating itineraries, respectively.

Therefore, claim 21 distinctly points out the subject matter of what Appellants consider as their invention.

With respect to claim 40, the examiner states:

With respect to claim 40, Appellant argues that "the additional itineraries generated without considering the constraints and with considering the constraints" has proper antecedent basis in the claims. Brief, 17. The grammatical structure of the phrase appears to reference additional itineraries generated without considering the constraints and additional itineraries generated with considering the constraints. While the former has antecedent basis in the claim, the latter does not. Moreover, the language requires pricing a particular set of "additional itineraries" with a definite article that are simultaneously generated with and without considering the same constraints. This is also confusing and prevents ascertaining the scope of the claim. Accordingly, the rejections made under § 112, second paragraph, should be sustained.

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The examiner continues to misinterpret the claim language in contending that "**the language requires pricing a particular set of "additional itineraries" with a definite article that are**

simultaneously generated with and without considering the same constraints." Claim 40 does not recite pricing additional itineraries that are *generated* with and without considering the constraints, as the examiner states. Rather, claim 40 recites *pricing* the additional generated itineraries with and without considering the constraints. The additional itineraries recited in claim 40 are generated without considering the constraints, but priced both with and without considering the constraints. Because the faring process is distinct from the process that generates the itineraries, Appellants contend that one of ordinary skill in the art, after reading claim 40, would clearly understand the metes and bounds of claim 40.

3. Rejections under 35 U.S.C. 102(b)

Appellants stand by the arguments made in the Appeal Brief and provide the following additional arguments to address the comments made in the Examiner's Answer.

The examiner states:

> **Appellant argues that "[t]hese portions of de Marcken, however, describe the faring process that in turn is clearly described to operate on itineraries that were previously provided from a scheduler process 16." Brief, 19. Simply because DeMarcken teaches the decomposition into faring atoms as described by Appellant, the conclusion does not follow that it fails to teach the broadly claimed "determining constraints." The claims do not exclude in any way this faring process or any previous operations on the flights, and accordingly read on the disclosure provided in DeMarcken. Moreover, this is a distinction without a difference, because in DeMarcken "faring atoms refer to a sequence of flight segments ... " (col. 9, lines 27-28). After decomposition, these sequences of flights are used in DeMarcken to generate final itineraries (see cols. 10 and 61), thus meeting the required limitations.**

Appellants are not claiming determining any constraints as the examiner seems to allege. Rather, claim 21, for example, recites determining "constraints on sequences of flights ... to connect the endpoints of the trip segments," and "generate itineraries ... using the constraints." de Marcken does not describe or suggest determining any constraints on the sequences of flights, let alone generating itineraries using the constraints. Because the faring process described by de Marcken requires an itinerary as a starting point, de Marcken cannot logically suggest, much less describe, the foregoing feature of claim 21. In this regard, de Marcken describes[2]:

[2] de Marcken, Col. 9, lines 19-29.

> Referring now to figures 4A and 4B, **the faring process** 18 includes the process 80 **to retrieve itinerary sets for all slices in an itinerary**. The itinerary sets are provided from the scheduler process 16 for each slice of a journey where a slice corresponds to a direction of travel. Thus, for example, for a round-trip journey there would be two slices, one for the outbound part of the journey and one for the return part of the journey. **The faring process 18 decomposes 82 the itinerary into faring atoms**. As used herein, faring atoms refer to a sequence of flight segments or equivalently legs that are spanned by a single fare. (emphasis added)

de Marcken clearly makes a distinction between a process that generates the itineraries (referred to in de Marcken as a scheduler process 16) and a process that prices the generated itineraries (referred to in de Marcken as the faring process 18). de Marcken describes:

> The scheduler process 16 provides the itineraries to a faring process 18. The faring process 18 provides a set of pricing solutions 38 by finding valid affairs corresponding to the itineraries produced by the scheduler process 16. The faring process 18 validates affairs for inclusion in the set of pricing solutions 38.

Therefore, de Marcken, which describes pricing known itineraries, neither describes nor renders obvious generating itineraries in accordance with the features recited in claim 21. The examiner continues to misunderstand the distinct processes of generating itineraries and pricing itineraries because the examiner continues to treat the phrase "determining constraints" in isolation without properly construing the claim as a whole. The claim terms however should not be interpreted in a vacuum, devoid of the context of the claim as a whole. See *Hockerson-Halberstadt, Inc. v. Converse Inc.*, 183 F.3d 1369, 1374 (Fed. Cir. 1999) ("proper claim construction ... demands interpretation of the entire claim in context, not a single element in isolation."); *ACTV, Inc. v. Walt Disney Co.*, 346 F.3d 1082, 1088 (Fed. Cir. 2003) ("While certain terms may be at the center of the claim construction debate, the context of the surrounding words of the claim also must be considered....").

With respect to claim 22, the examiner states:

> **Appellant argues that the constraints in DeMarcken are not on flights. Brief, 20. Examiner maintains that the constraints in DeMarcken are plainly "on flights," as the term "constraint" is being interpreted in accordance with the Specification (see above).**

Appellants contend that the examiner is treating the claim terms in isolation. The constraints recited in claim 22 refers to "constraints on sequences of flights... derived from fares between the endpoints of the trip segments." The constraints, as recited in claim 22 are used to generate itineraries of sequences of flights unlike that described by de Marcken. Accordingly, de Marcken neither describes nor suggests the feature recited in claim 22.

The examiner further states:

> **In addition to arguing an overly narrow definition of what can and cannot be considered a "constraint," Appellant similarly does so with claim terms such as "flight" and "itinerary." Appellant attempts to differentiate DeMarcken from the claimed invention by asserting that "this passage from de Marcken deals with selecting itineraries to pair with different segments of a trip (e.g., return and outbound itineraries), not selecting flights to include in itineraries as recited in the claim." Brief, 19. This alleged difference is specious, and Examiner maintains that the claimed flights and itineraries are no different from the flights and itineraries disclosed by DeMarcken.**

The examiner misunderstands the position of Appellants. Appellants are not arguing that the terms "flight," "constraint," and "itinerary" are different in meaning from what is disclosed in de Marcken. Appellants use these terms in a similar manner as those terms are used in the reference. Appellant contends that because of the differences in processing of flight, constraint and itinerary, as stated above, de Marcken clearly fails to describe the feature of determining "constraints on sequences of flights ... to connect the endpoints of the trip segments," and "generate itineraries ... using the constraints."

With respect to claim 51, the examiner states:

> **Appellant argues that DeMarcken does not disclose generating itineraries using the constraints, but does not explain why this is the case. Brief, 20. Examiner maintains that DeMarcken fully discloses this feature in the manner shown above.**

As described above in detail, as well as in the Appeal Brief, de Marcken does not disclose generating itineraries using the constraints at least because de Marcken is directed to pricing of itineraries determined by the scheduler. The faring process described in de Marcken peruses generated itineraries from the scheduler and therefore the references neither describes nor

suggests generating itineraries using any constraints, let alone "geographic and airline constraints derived from available fares," as recited in claim 51.

With respect to claim 63, the examiner states:

> **With respect to claims 63 et al., Appellant argues that DeMarcken fails to disclose "a diverse set of fares." Brief,21. Examiner interprets claimed diversity in accordance with its broadest reasonable interpretation in light of the Specification to merely require that the set of fares is not homogeneous, which is taught by DeMarcken in the manner shown above.**

The examiner misunderstands Appellants' position. Appellants are not arguing that de Marcken fails to disclose a diverse set of fares as the examiner states. Rather, appellants contend that de Marcken neither describes nor suggests "sequences of flights constrained by multiple constraints that are derived from a diverse set of fares in order to increase the diversity of generated itineraries using the multiple constraints." Nothing in de Marcken even suggests, much less describes, considering multiple constraints derived from a diverse set of fares to increase diversity of generated itineraries.

This Reply Brief is accompanied by a Request for Oral Argument.

No fees are believed due. Please apply any charges or credits to Deposit Account No. 06-1050 referencing attorney docket number 09765-0036001.

Respectfully submitted,

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